Section 1. Identification

1.1 Product identifier
Product name: EGFR 18-21 MASTR
Part No. (Chemical Kit): MR-0130.024
Part No.: AR 1
PCR Mix Plex 1: I-0792
Taq DNA Polymerase: I-0829
Validation date: 1/18/2018

1.2 Relevant identified uses of the substance or mixture and uses advised against
Material uses:
- Analytical reagent.
  - For Research Use Only. Not for use in diagnostic procedures.
- AR 1
  - 1 ml
- PCR Mix Plex 1
  - 0.080 ml
- Taq DNA Polymerase
  - 0.005 ml

1.3 Details of the supplier of the safety data sheet
Supplier/Manufacturer: Agilent Technologies Belgium
De Kleetlaan 5 bus 9
1831 Diegem
Belgium

1.4 Emergency telephone number
In case of emergency: CHEMTREC®: 1-800-424-9300

Section 2. Hazards identification

2.1 Classification of the substance or mixture
OSHA/HCS status: AR 1

While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

PCR Mix Plex 1

While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

Taq DNA Polymerase

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture

Taq DNA Polymerase
H320 EYE IRRITATION - Category 2B

Ingredients of unknown toxicity
- Taq DNA Polymerase

Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 10 - 30%

2.2 GHS label elements
Signal word: 

Date of issue: 01/18/2018
Section 2. Hazards identification

Hazard statements:
AR 1: No signal word.
PCR Mix Plex 1: No signal word.
Taq DNA Polymerase: Warning

No known significant effects or critical hazards.

Precautionary statements:
Prevention:
AR 1: Not applicable.
PCR Mix Plex 1: Not applicable.
Taq DNA Polymerase: P264 - Wash hands thoroughly after handling.

Response:
AR 1: Not applicable.
PCR Mix Plex 1: Not applicable.
Taq DNA Polymerase: P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 - If eye irritation persists: Get medical attention.

Storage:
AR 1: Not applicable.
PCR Mix Plex 1: Not applicable.
Taq DNA Polymerase: Not applicable.

Disposal:
AR 1: Not applicable.
PCR Mix Plex 1: Not applicable.
Taq DNA Polymerase: Not applicable.

Supplemental label elements:
AR 1: None known.
PCR Mix Plex 1: None known.
Taq DNA Polymerase: None known.

2.3 Other hazards
Hazards not otherwise classified:
AR 1: None known.
PCR Mix Plex 1: None known.
Taq DNA Polymerase: None known.

Section 3. Composition/information on ingredients

Substance/mixture:
AR 1: Mixture
PCR Mix Plex 1: Mixture
Taq DNA Polymerase: Mixture

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taq DNA Polymerase</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glycerol</td>
<td>≥25 - ≤50</td>
<td>56-81-5</td>
</tr>
</tbody>
</table>

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.
Section 4. First aid measures

4.1 Description of necessary first aid measures

Eye contact : AR 1

**PCR Mix Plex 1**
Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

**Taq DNA Polymerase**
Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Inhalation : AR 1

**PCR Mix Plex 1**
Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

**Taq DNA Polymerase**
Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact : AR 1

**PCR Mix Plex 1**
Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

**Taq DNA Polymerase**
Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Ingestion : AR 1

**PCR Mix Plex 1**
Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and
Section 4. First aid measures

Taq DNA Polymerase

the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

4.2 Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : AR 1
PCR Mix Plex 1
Taq DNA Polymerase

No known significant effects or critical hazards.

PCR Mix Plex 1
Taq DNA Polymerase

Causes eye irritation.

Inhalation : AR 1
PCR Mix Plex 1
Taq DNA Polymerase

No known significant effects or critical hazards.

Skin contact : AR 1
PCR Mix Plex 1
Taq DNA Polymerase

No known significant effects or critical hazards.

Ingestion : AR 1
PCR Mix Plex 1
Taq DNA Polymerase

No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : AR 1
PCR Mix Plex 1
Taq DNA Polymerase

No specific data.

Adverse symptoms may include the following:
irritation
watering
redness

Inhalation : AR 1
PCR Mix Plex 1
Taq DNA Polymerase

No specific data.

Skin contact : AR 1
PCR Mix Plex 1
Taq DNA Polymerase

No specific data.

Ingestion : AR 1
PCR Mix Plex 1
Taq DNA Polymerase

No specific data.

4.3 Indication of immediate medical attention and special treatment needed, if necessary

Date of issue : 01/18/2018
## Section 4. First aid measures

<table>
<thead>
<tr>
<th>Notes to physician</th>
<th>Protection of first-aiders</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCR Mix Plex 1</td>
<td>Taq DNA Polymerase</td>
</tr>
<tr>
<td>No action shall be taken involving any personal risk or without suitable training.</td>
<td>Taq DNA Polymerase</td>
</tr>
<tr>
<td>In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.</td>
<td></td>
</tr>
<tr>
<td>Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.</td>
<td></td>
</tr>
<tr>
<td>Notes to physician</td>
<td>PCR Mix Plex 1</td>
</tr>
<tr>
<td>Ar 1</td>
<td>Taq DNA Polymerase</td>
</tr>
<tr>
<td>No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.</td>
<td></td>
</tr>
<tr>
<td>Specific treatments</td>
<td>Protection of first-aiders</td>
</tr>
<tr>
<td>PCR Mix Plex 1</td>
<td>Taq DNA Polymerase</td>
</tr>
<tr>
<td>No specific treatment.</td>
<td>Taq DNA Polymerase</td>
</tr>
<tr>
<td>No specific treatment.</td>
<td></td>
</tr>
<tr>
<td>Specific treatments</td>
<td>Protection of first-aiders</td>
</tr>
<tr>
<td>PCR Mix Plex 1</td>
<td>Taq DNA Polymerase</td>
</tr>
<tr>
<td>No specific treatment.</td>
<td>Taq DNA Polymerase</td>
</tr>
<tr>
<td>No specific treatment.</td>
<td></td>
</tr>
</tbody>
</table>

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### 5.1 Extinguishing media

<table>
<thead>
<tr>
<th>Suitable extinguishing media</th>
<th>Unsuitable extinguishing media</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCR Mix Plex 1</td>
<td>Taq DNA Polymerase</td>
</tr>
<tr>
<td>Use an extinguishing agent suitable for the surrounding fire.</td>
<td>Use an extinguishing agent suitable for the surrounding fire.</td>
</tr>
<tr>
<td>Taq DNA Polymerase</td>
<td>Use an extinguishing agent suitable for the surrounding fire.</td>
</tr>
<tr>
<td>None known.</td>
<td>None known.</td>
</tr>
</tbody>
</table>

### 5.2 Special hazards arising from the substance or mixture

<table>
<thead>
<tr>
<th>Specific hazards arising from the chemical</th>
<th>Hazardous thermal decomposition products</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCR Mix Plex 1</td>
<td>Taq DNA Polymerase</td>
</tr>
<tr>
<td>In a fire or if heated, a pressure increase will occur and the container may burst.</td>
<td>Decomposition products may include the following materials:</td>
</tr>
<tr>
<td>Taq DNA Polymerase</td>
<td>carbon dioxide</td>
</tr>
<tr>
<td>In a fire or if heated, a pressure increase will occur and the container may burst.</td>
<td>carbon monoxide</td>
</tr>
<tr>
<td>Taq DNA Polymerase</td>
<td>nitrogen oxides</td>
</tr>
<tr>
<td>In a fire or if heated, a pressure increase will occur and the container may burst.</td>
<td>phosphorus oxides</td>
</tr>
<tr>
<td>Taq DNA Polymerase</td>
<td>Decomposition products may include the following materials:</td>
</tr>
<tr>
<td>No specific data.</td>
<td>carbon dioxide</td>
</tr>
<tr>
<td>Decomposition products may include the following materials:</td>
<td>carbon monoxide</td>
</tr>
<tr>
<td>carbon dioxide</td>
<td>Decomposition products may include the following materials:</td>
</tr>
<tr>
<td>carbon monoxide</td>
<td>carbon dioxide</td>
</tr>
</tbody>
</table>
Section 5. Fire-fighting measures

5.3 Advice for firefighters

Special protective actions for fire-fighters:
- Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
  - PCR Mix Plex 1
  - Taq DNA Polymerase

Special protective equipment for fire-fighters:
- Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
  - PCR Mix Plex 1
  - Taq DNA Polymerase

Section 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel:
- No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
  - PCR Mix Plex 1
  - Taq DNA Polymerase

For emergency responders:
- If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
  - PCR Mix Plex 1
## Section 6. Accidental release measures

<table>
<thead>
<tr>
<th>Product</th>
<th>Environmental precautions</th>
<th>Methods and materials for containment and cleaning up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taq DNA Polymerase</td>
<td>Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.</td>
<td>Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.</td>
</tr>
<tr>
<td>PCR Mix Plex 1</td>
<td>Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.</td>
<td>Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.</td>
</tr>
<tr>
<td>Taq DNA Polymerase</td>
<td>Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.</td>
<td>Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.</td>
</tr>
</tbody>
</table>

## Section 7. Handling and storage

### 7.1 Precautions for safe handling

<table>
<thead>
<tr>
<th>Product</th>
<th>Protective measures</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Taq DNA Polymerase</td>
<td>Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.</td>
<td></td>
</tr>
</tbody>
</table>
Section 7. Handling and storage

**Advice on general occupational hygiene**

- **EGFR 18-21 MASTR**
  - Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

**7.2 Conditions for safe storage, including any incompatibilities**

- **AR 1**
  - Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

**PCR Mix Plex 1**

**Taq DNA Polymerase**

**7.3 Specific end use(s)**

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Section 7. Handling and storage

**Recommendations**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Industrial applications, Professional applications.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taq DNA Polymerase</td>
<td>AR 1</td>
</tr>
<tr>
<td>PCR Mix Plex 1</td>
<td>AR 1</td>
</tr>
<tr>
<td>Glycerol</td>
<td>Not applicable.</td>
</tr>
</tbody>
</table>

**Industrial sector specific solutions**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Industrial applications, Professional applications.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taq DNA Polymerase</td>
<td>AR 1</td>
</tr>
<tr>
<td>PCR Mix Plex 1</td>
<td>AR 1</td>
</tr>
<tr>
<td>Glycerol</td>
<td>Not applicable.</td>
</tr>
</tbody>
</table>

Section 8. Exposure controls/personal protection

8.1 Control parameters

**Occupational exposure limits**

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TWA: 5 mg/m³ 8 hours. Form: Respirable fraction</td>
</tr>
<tr>
<td></td>
<td>TWA: 10 mg/m³ 8 hours. Form: Total dust</td>
</tr>
<tr>
<td>Glycerol</td>
<td>OSHA PEL (United States, 6/2016).</td>
</tr>
<tr>
<td></td>
<td>TWA: 5 mg/m³ 8 hours. Form: Respirable fraction</td>
</tr>
<tr>
<td></td>
<td>TWA: 15 mg/m³ 8 hours. Form: Total dust</td>
</tr>
</tbody>
</table>

8.2 Exposure controls

**Appropriate engineering controls**: Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

**Environmental exposure controls**: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

**Individual protection measures**

**Hygiene measures**: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period.

Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection**: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

**Skin protection**

**Hand protection**: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

**Body protection**: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Other skin protection**: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Date of issue: 01/18/2018
**Section 8. Exposure controls/personal protection**

**Respiratory protection**: Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

**Section 9. Physical and chemical properties**

**9.1 Information on basic physical and chemical properties**

**Appearance**

<table>
<thead>
<tr>
<th>Property</th>
<th>AR 1</th>
<th>PCR Mix Plex 1</th>
<th>Taq DNA Polymerase</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physical state</strong></td>
<td>Liquid.</td>
<td>Liquid.</td>
<td>Liquid. [Clear. / solution]</td>
</tr>
<tr>
<td><strong>Color</strong></td>
<td>Not available.</td>
<td>Not available.</td>
<td>Colorless.</td>
</tr>
<tr>
<td><strong>Odor</strong></td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Odor threshold</strong></td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>pH</strong></td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Melting point</strong></td>
<td>0°C (32°F)</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Boiling point</strong></td>
<td>100°C (212°F)</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Flash point</strong></td>
<td>Not applicable.</td>
<td>Not applicable.</td>
<td>Not applicable.</td>
</tr>
<tr>
<td><strong>Evaporation rate</strong></td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Flammability (solid, gas)</strong></td>
<td>Not applicable.</td>
<td>Not applicable.</td>
<td>Not applicable.</td>
</tr>
<tr>
<td><strong>Lower and upper explosive (flammable) limits</strong></td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Vapor pressure</strong></td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Vapor density</strong></td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Relative density</strong></td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Solubility</strong></td>
<td>Easily soluble in the following materials: cold water and hot water.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

**Date of issue**: 01/18/2018
## Section 9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>AR 1</th>
<th>PCR Mix Plex 1</th>
<th>Taq DNA Polymerase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto-ignition temperature</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

## Section 10. Stability and reactivity

### 10.1 Reactivity

No specific test data related to reactivity available for this product or its ingredients.

### 10.2 Chemical stability

The product is stable.

### 10.3 Possibility of hazardous reactions

Under normal conditions of storage and use, hazardous reactions will not occur.

### 10.4 Conditions to avoid

No specific data.

### 10.5 Incompatible materials

May react or be incompatible with oxidizing materials.

### 10.6 Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Section 11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taq DNA Polymerase</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>12600 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>Glycerol</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Irritation/Corrosion

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Score</th>
<th>Exposure</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taq DNA Polymerase</td>
<td>Eyes - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 milligrams</td>
<td>-</td>
</tr>
<tr>
<td>Glycerol</td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 milligrams</td>
<td>-</td>
</tr>
</tbody>
</table>

Sensitization
Not available.

Mutagenicity
Not available.

Carcinogenicity
Not available.

Reproductive toxicity
Not available.

Teratogenicity
Not available.

Specific target organ toxicity (single exposure)
Not available.

Specific target organ toxicity (repeated exposure)
Not available.

Aspiration hazard
Not available.

Information on the likely routes of exposure

| AR 1 | PCR Mix Plex 1 | Taq DNA Polymerase | Not available. | Routes of entry anticipated: Oral, Dermal, Inhalation. |

Potential acute health effects

Eye contact

| AR 1 | PCR Mix Plex 1 | Taq DNA Polymerase | No known significant effects or critical hazards. | Causes eye irritation. |

Inhalation

| AR 1 | PCR Mix Plex 1 | Taq DNA Polymerase | No known significant effects or critical hazards. | No known significant effects or critical hazards. |

Skin contact

| AR 1 | PCR Mix Plex 1 | Taq DNA Polymerase | No known significant effects or critical hazards. | No known significant effects or critical hazards. |

Ingestion

| AR 1 | PCR Mix Plex 1 | Taq DNA Polymerase | No known significant effects or critical hazards. | No known significant effects or critical hazards. |

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Section 11. Toxicological information

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : AR 1
PCR Mix Plex 1 No specific data.
Taq DNA Polymerase No specific data.

Inhalation : AR 1
PCR Mix Plex 1 No specific data.
Taq DNA Polymerase No specific data.

Skin contact : AR 1
PCR Mix Plex 1 No specific data.
Taq DNA Polymerase No specific data.

Ingestion : AR 1
PCR Mix Plex 1 No specific data.
Taq DNA Polymerase No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure
Potential immediate effects : Not available.
Potential delayed effects : Not available.

Long term exposure
Potential immediate effects : Not available.
Potential delayed effects : Not available.

Potential chronic health effects

General : AR 1
PCR Mix Plex 1 No known significant effects or critical hazards.
Taq DNA Polymerase No known significant effects or critical hazards.

Carcinogenicity : AR 1
PCR Mix Plex 1 No known significant effects or critical hazards.
Taq DNA Polymerase No known significant effects or critical hazards.

Mutagenicity : AR 1
PCR Mix Plex 1 No known significant effects or critical hazards.
Taq DNA Polymerase No known significant effects or critical hazards.

Teratogenicity : AR 1
PCR Mix Plex 1 No known significant effects or critical hazards.
Taq DNA Polymerase No known significant effects or critical hazards.

Developmental effects : AR 1
PCR Mix Plex 1 No known significant effects or critical hazards.
Taq DNA Polymerase No known significant effects or critical hazards.

Fertility effects : AR 1
PCR Mix Plex 1 No known significant effects or critical hazards.
Taq DNA Polymerase No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates
Not available.
Section 11. Toxicological information

Section 12. Ecological information

12.1 Toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taq DNA Polymerase</td>
<td>Acute LC50 54000 mg/l Fresh water</td>
<td>Fish - Oncorhynchus mykiss</td>
<td>96 hours</td>
</tr>
</tbody>
</table>

12.2 Persistence and degradability

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Result</th>
<th>Dose</th>
<th>Inoculum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taq DNA Polymerase</td>
<td>301D Ready Biodegradability - Closed Bottle Test</td>
<td>93 % - 30 days</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

12.3 Bioaccumulative potential

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogP&lt;sub&gt;ow&lt;/sub&gt;</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taq DNA Polymerase</td>
<td>-1.76</td>
<td>-</td>
<td>low</td>
</tr>
</tbody>
</table>

12.4 Mobility in soil

Soil/water partition coefficient (K<sub>oc</sub>) : Not available.

12.5 Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

13.1 Waste treatment methods

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

The information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

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Section 14. Transport information

DOT / TDG / Mexico / IMDG / IATA : Not regulated.

Special precautions for user : Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL and the IBC Code: Not available.

Section 15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

U.S. Federal regulations : TSCA 8(a) PAIR: Poly(oxy-1,2-ethanediyl),.alpha.-[(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-

TSCA 8(a) CDR Exempt/Partial exemption: Not determined

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304 Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312 Classification : Not applicable.

PCR Mix Plex 1 EYE IRRITATION - Category 2A

Taq DNA Polymerase Not applicable.

SARA 311/312 Classification

| Name                | %  | Classification
|---------------------|----|-----------------|
| Taq DNA Polymerase  | ≥25 - ≤50 | EYE IRRITATION - Category 2A
| Glycerol           |    |                 |

Composition/information on ingredients

PCR Mix Plex 1 EYE IRRITATION - Category 2A

Taq DNA Polymerase Not applicable.

Sara 311/312 Classification

| Name                | %  | Classification
|---------------------|----|-----------------|
| Taq DNA Polymerase  | ≥25 - ≤50 | EYE IRRITATION - Category 2A
| Glycerol           |    |                 |

State regulations

Massachusetts : The following components are listed: GLYCERINE MIST

New York : None of the components are listed.

New Jersey : The following components are listed: GLYCERIN; 1,2,3-PROPANETRIOL

Pennsylvania : The following components are listed: 1,2,3-PROPANETRIOL

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

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Section 15. Regulatory information

Not listed.

Montreal Protocol (Annexes A, B, C, E)
Not listed.

Stockholm Convention on Persistent Organic Pollutants
Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)
Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals
Not listed.

Inventory list
Australia: Not determined.
Canada: Not determined.
China: Not determined.
Europe: Not determined.
Malaysia: Not determined.
New Zealand: Not determined.
Philippines: Not determined.
Republic of Korea: Not determined.
Taiwan: Not determined.
Thailand: Not determined.
Turkey: Not determined.
United States: Not determined.
Viet Nam: Not determined.

Section 16. Other information

History
Date of issue: 01/18/2018
Date of previous issue: 08/30/2017.
Version: 2

Indicates information that has changed from previously issued version.

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